Message

From: Qazzaz, Bilal [qazzaz.bilal@epa.gov]
Sent: 7/19/2017 12:59:02 PM
To: Compher, Michael [compher.michael@epa.gov]
Subject: FW: OIG Accuracy Confirmation #2
Attachments: AMP251_1573228.pdf

Michael,

I ran an AMP251 (2013-2017) and crossed checked with MDEQ's annual networks plans and they both indicate MDEQ employs
API Teledyne Ozone analyzers—method code 087.

Bilal Qazzaz | U.S. Environmental Protection Agency R5
Air & Radiation Division | Air Monitoring and Analysis
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From: Papp, Michael
Sent: Wednesday, July 19, 2017 7:08 AM
To: Compher, Michael <compher.michael@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Qazzaz, Bilal <qazzaz.bilal@epa.gov>
Subject: RE: OIG Accuracy Confirmation #2

Hey Mike. Can I get the method code for the monitor at the Allen Park Site. Thanks

From: Compher, Michael
Sent: Friday, July 14, 2017 3:20 PM
To: Papp, Michael <Papp.Michael@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Qazzaz, Bilal <qazzaz.bilal@epa.gov>
Subject: RE: OIG Accuracy Confirmation #2

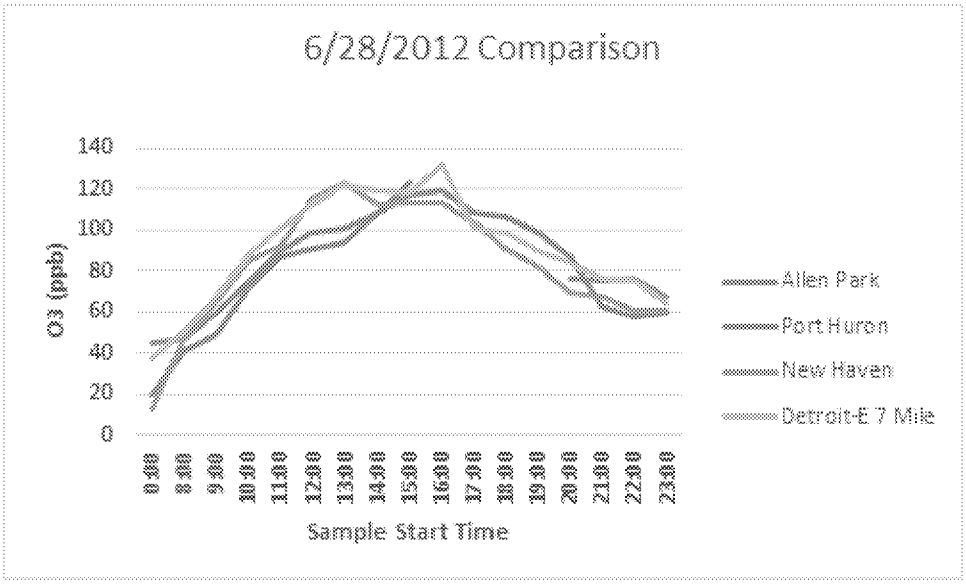
Good afternoon Mike,

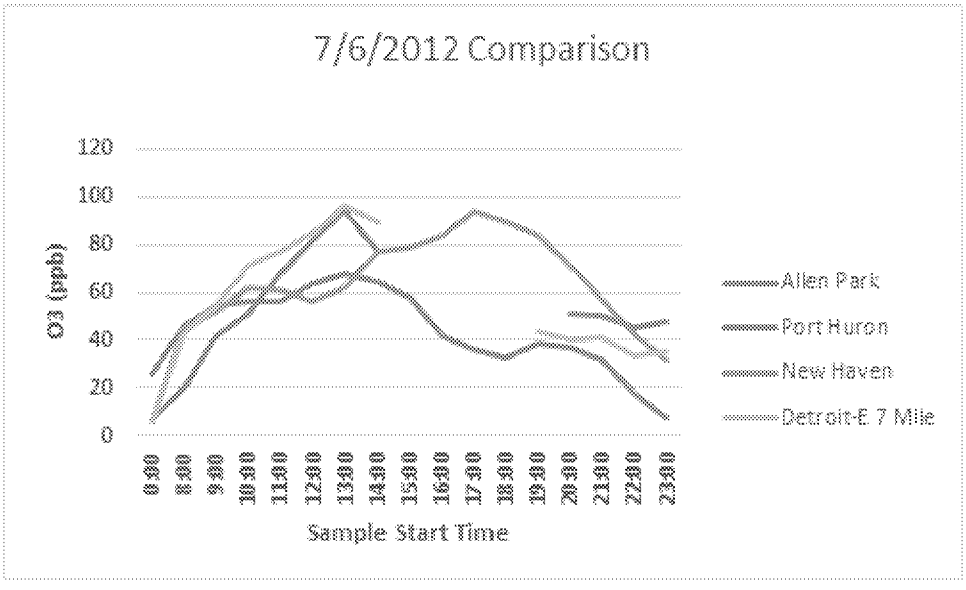
Sorry for the delayed response. I've been out of the office for part of the week. See our feedback, inserted below in your message and highlighted.

In addition to what you asked us to confirm the accuracy of, I have a few additional comments on the discussion document.

1. If there is any value in pointing this out, MDEQ (starting in 2017 as a result of the OIG investigation and our subsequent discussions) no longer performs the data adjustment.
2. In the discussion of Michigan's shelter temperature, it is true that MDEQ has a wider shelter temperature acceptance criteria in their QAPP than our QA handbook, however we confirmed that (as the handbook allows), the instrument (API) that MDEQ uses allows (per the FEM description in 40 CFR 53) for a broader range than the QA Handbook and the MDEQ QAPP. Allen Park, the site identified in the IG report, is closer to downtown Detroit and not typically the highest reading ozone site. Also, it may be worth noting that the 2 highest reading ozone sites (DV site is consistently one or the other of these two) in the Detroit area both had complete data for one of the two days the IG identified, and one of the two highest reading DV sits had data for the other day the IG identified (see plots below). Lastly, we have had discussions with some of our monitoring agencies about

maintaining shelter temp for their "critical" DV sites. There are best practices deployed at these sites to avoid having these shelter temp exceedances. For example, some agencies keep a spare new ac unit at the station to be able to perform a quick switch if one goes down. Another agency, it's my understanding, has two AC units installed in case one goes out. The point is, our Agencies are concerned about this criteria and pay very close attention to the most important sites. I can get you more information about these "best practices" if you want to include something like this in the response, or as a general document as part of our action items. Lastly, it might be valuable is to do this type of analysis (# hours invalidated due to shelter temp exceedance) on the list of sites that are providing the DVs for the major urban (and nonattainment) areas, similar to table below we did for 4 sites in Detroit.





				# occurrences of AE null code (hourly data) for 4 Detroit sites					
Site	**State**	**County**	**Site**	**2012**	**2013**	**2014**	**2015**	**2016**	**Total**
New Haven	26	99	9	0	0	0	0	0	**0**
Allen Park	26	163	1	58	92	167	57	0	**374**
Port Huron	26	147	5	0	0	0	0	0	**0**

Detroit-E 7 Mile	26	163	19	20	4	0	0	84	**108**

3. In the MDEQ scenario that the IG used to illustrate impact on data quality (details provided in the methodology appended, p 17+), doesn't accurately reflect MDEQ's data adjustment practice. Last Friday I followed up with MDEQ to clarify/confirm (see attached excerpt from an email exchange, copied below, with Susan Kilmer). The OIG's discussion document's illustration shows that MDEQ uses an already truncated concentration, applied an adjustment factor with more significant digits than the raw value, then truncated again. They way this is portrayed in the OIG report is not accurate (from my understanding, we may want to request they confirm directly with MDEQ), and it magnifies the impact of MDEQ's former data adjustment practice.

   My question to Susan: "I have one additional, unrelated question for you that relates back to the stepped data adjustment on the ozone data from past years that was calculated through the DAS software. How many significant digits did your raw data have when the step-wise adjustment was applied. For example, did your instrument report 68 ppb, then the software applied a -1.083 correction, resulting in an adjusted concentration of 66.917 that is then truncated to 66 when reported? Is this correct, or did your raw ambient data start with more significant digits (e.g. 68.125, less the 1.083 adjustment = 67.042, then truncated to 67ppb)?"

   Susan's Response: "In looking at the Edit History file, for example, it show the Previous Value: 51.142930 and New Value: 53.991970. So I believe the correction was applied to the 6-decimal places. After that, I'm not sure if it rounds or truncates. In our software, it shows one decimal place 53.9 but on the website it shows whole numbers. If you need to know how it gets from the 6-decimal to the 1-decimal place, let me know and I can check with our guy on Monday. "

Michael Compher
Chief, Air Monitoring and Analysis Section
Region 5 Air and Radiation Division
U.S. Environmental Protection Agency
Phone: 312-886-5745

From: Papp, Michael
Sent: Monday, July 10, 2017 2:22 PM
To: Compher, Michael <compher.michael@epa.gov>; Ackerman, Laura <Ackerman.Laura@epa.gov>
Subject: OIG Accuracy Confirmation #2

Lew Weinstock has confirmed that the OIG has sent the Discussion Document out to Regions 4, 5 and 9. A number of us are reading it here and developing our comments for Lew.

Lew asked that we try to confirm the accuracy of the OIG comments made about the Regions. What follows is a set of OIG bullets related to Regions 4 and 5

Technical Systems Audits Comments

- EPA Region 4's 2011 and 2014 TSAs identified zero adjustment practices in Georgia, but concluded that the practice was allowed. The 2014 TSA should have noted that the practice did not follow the EPA's 2013 QA Handbook recommended practices. Region 4 TSAs did not identify zero adjustment practices in South Carolina.
- The EPA Region 5's TSA did not identify zero adjustment practices in Michigan. Michigan DEQ managers told us its process of conducting daily zero adjustments to monitoring data had never been discussed with Region 5, which was one of the reasons the monitoring agency was not aware that its practice was not consistent with the EPA's guidance. Correct, to our knowledge (though we've had a few staff retire and/or depart that participated on past TSAs) R5 never discussed MDEQ's practice of zero adjustment.

- Region 4's 2015 TSA of South Carolina noted that the state's ozone validation criteria did not conform to the QA Handbook. However, the issue was not resolved because South Carolina was still using critical criteria for data validation that were less stringent than those the EPA recommended at the time of our review in August 2016.
- The QA Handbook states that as part of the TSA process, a portion of data is selected and an audit is conducted from field operations to data management.
- In the cases of South Carolina and Michigan, EPA Region 4 and EPA Region 5, respectively, focused on other areas of the monitoring program during recent TSAs, and did not identify zero adjustment practices for ozone monitoring used by monitoring agencies in South Carolina or Michigan. R5 reviewed the 2008, 2011, and 2014 TSAs conducted on MDEQ and none of the Final Reports detected the zero drift adjustments enabled in the Envidas telemetry system, so OIG's statement is accurate.

Shelter Temperature Comments (including attachment 3)

- We identified shelter temperature invalidations at four sites, in three different states, which impacted the 8-hour daily average maximums during some of the highest annual ozone days at these sites. See Attachment 3 for more details.
    - In Augusta, Georgia, two of the four highest ozone days in 2012 each had three hours invalidated because of shelter temperature exceedances. The invalidated data resulted in 8-hour average daily maximums that were 3 ppb and 6 ppb less than they would have been had the hours not been invalidated.
    - In Conyers, Georgia, the second highest ozone day in 2012 had 4 hours invalidated because of shelter temperature exceedances. The invalidated data did not vary significantly from other valid hourly data reported before and after the shelter temperature exceedances. Invalidating the data resulted in an 8-hour average daily maximum that was 13 ppb less than it would have been had the hours not been invalidated.
    - In Cape Romaine, South Carolina, the second highest ozone day in 2014 had three hours invalidated due to shelter temperature. The invalidated data resulted in an 8-hour average daily maximum 3 ppb higher than it would have been had the hours not been invalidated.
    - In Allen Park, Michigan, two of the top eight highest ozone days in 2012 had three and four hours invalidated due to shelter temperature. The invalidated data did not vary significantly from other valid hourly data before and after the shelter temperature exceedances. Invalidating this data resulted in an 8-hour average daily maximum that was 3 ppb less than it would have been had the hours not been invalidated. From R5's analysis of the Allen Park data, 6/28/2012 and 7/6/2012 were indeed two of the top eight highest ozone days in 2012 and the OIG statement about invalidated data (due to shelter temperature exceedances) for these days is correct. 7/6/2012 actually had 5 total hours invalidated due to shelter temperature (rather than just the three that are used in the 8-hr max calculation in Table 6 of the OIG discussion document).

Please confirm the accuracy of these statements and if there has been any corrective action. I don't expect much inaccuracy in the way of shelter temperature. This was not really brought up as a major issue before but they seemed to have some additional focus on it in this report

Thanks

Mike Papp
EPA

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